Butterflies on the Greek Island of Samos, 12 – 26 September 1999.

As many readers will be aware, disastrous fires swept large parts of the island of Samos (eastern Aegean) in July 2000. Apart from the cost to the island's human inhabitants, it is clear that important wildlife habitats have also been lost. As studies continue to assess these losses, and to chart the hoped-for recovery, the following account of a visit to the island the year before the fire may be of some interest.

In the early evening of 12 September, my wife and I arrived at our hotel in Kokkari, an attractive fishing village and tourist resort on the north coast of the island. The butterflies were to be only a minor distraction from our primary aim of a relaxing holiday. I had in any case learned from correspondence with Alain Olivier that September was most certainly not the best time to visit the island for butterflies. Nevertheless, I harboured the thought that since most other entomologists would no doubt agree, I might discover something interesting by an "off-season" visit. The village itself offered a nice choice of alternative environments: the sea-front, lined with tourist-oriented restaurants and cafes, or the main street, with a more traditional café/restaurant, and a superb bakery/café, where we spent most of our evenings discussing the meaning of life with the owner and family.

The richness of the local wildlife was evident from the first evening – a Hummingbird Hawk-moth in the hotel garden, the swooping flight of bats, and a huge centipede making its way across the street. In the days that followed, conventional holiday pass-times alternated with "casual" entomologising. I located three interesting patches of habitat adjacent to the village, and these were regularly visited throughout the holiday. In addition, we undertook regular walks into the nearby hills to two lovely villages – Vourliotes and Manolates – these walks offered splendid views out over Kokkari and the sea beyond, and the villages themselves retained their traditional charm whilst offering a fine selection of cafes and restaurants! On the way to these villages and on the hillsides above were a range of habitats including abandoned agricultural terracing, Mediterranean maqui scrubland, olive and vine plantations, and, at higher altitudes, light pine woodland. Our visits to other parts of the island yielded no entomological surprises, and were disappointing in other ways too.

So, the low-level sites close to Kokkari. The first of these was a small field at the edge of the village, which sloped down to the sea. It may have been used for livestock grazing, but at the time of our visit was unmanaged, with rank grasses, bramble scrub, and patches of a species of mint with long drooping flower-spikes (*Mentha longifolia*?). There was a path down one side of the field, with a ditch and damp patches. The remaining bramble flowers and the *Mentha* provided nectar sources, scarce at this time of year, for a range of insect species, and there was a continual flow of nectaring visitors, in addition to what I took to be resident breeding species in the field. Over the course of the holiday, I recorded the following species here: *Papilio machaon, Iphiclides podalirius, Pieris rapae, Colias crocea, Leptidea sinapis, Lampides boeticus, Leptotes pirithous, Polyommatus thersites, Charaxes jasius, Vanessa cardui, Polygonia egea, Hipparchia fatua, Hipparchia senthes, Maniola telmessia, Charcharodus alceae, Gegenes pumilio* and *Pelopidas thrax*.

Of these, the most interesting to me were *M. telmessia* and *P. thrax*, as two species I had never encountered before. The first is a species of "meadow brown" whose

main distribution is the middle east and Asia Minor, and restricted in Europe to the islands of the eastern Aegean. In appearance it is very similar to our own *M. jurtina*, but it is somewhat smaller, with a more rounded shape to the fore-wings, and often with double apical ocelli. The females varied considerably in the amount and distribution of orange coloration on the upper-side, some approaching the appearance of *M. tithonus*. The phenology of this species is very interesting, in that adults emerge from mid April onwards, with mating taking place during the spring. The females then aestivate through the hottest months, and only when activity is resumed are the eggs fertilised and laid (see Olivier, 1993. *The Butterflies of the Greek Island of Rodos*. Antwerp: VVVE, pp. 142-76). I had expected to see only females in mid to late September, and for these to be in poor condition. However, though many individuals were worn or damaged, some were in very good condition, and this included several males among the population flying at this site. Females, especially, were observed nectaring from the *Mentha* flowers, usually settling, opening and closing their wings two or three times, and then nectaring with wings closed. Males were more often seen, especially early in the day, settled with wings open. Both sexes sought the shade under scrub during the hottest part of the day. Despite close observation, no "courtship" or mating behaviour was observed. The species was still flying with no evident decline in numbers or condition on our last day, 24 September.

P. thrax is a large, dark "skipper", similar in general appearance to *Gegenes pumilio* and *nostrodamus*. Like *telmessia*, this species has an easterly distribution, which includes Africa and the Far East as well as the Middle East. In Europe, it appears to be confined to Samos, though Tolman (1997. *Butterflies of Britain and Europe*. HarperCollins), also gives Rhodes. The large white spots on the uppersides of the fore-wings are distinctive, and the males have an oblique white band of androconial scales, also on the fore-wings. In this site, males were observed in very small numbers (two or three at most) settled, wings half-open in typical skipper pose, in sun-spots along narrow tracks (presumably made by grazing mammals?) which wound through the rank grasses and bramble scrub. They were easily disturbed, and flew off very rapidly. The males of this species were found more commonly at another site, a dry river-bed at Platanakia, a coastal resort just to the west of Kokkari. Here they were occupying exposed, sunny spots on rocks, with wings half-open. They appeared to be territorial, flying up to "chase off" other males of the same species, and also passing individual *G. pumilio* or *M. telmessia*, which were also present.

Of the other species at the small field close to Kokkari, *G. pumilio* was seen here only once – a female nectaring on the *Mentha*, as was the striking Southern Comma (*P. egea*). The "blues" *L. boeticus* and *L. pirithous* were quite common, and frequently observed nectaring on the bramble and *Mentha*. One rather worn *Carcharodus sp.* was seen in the first few days, but was not definitively identified. Occasionally *P. machaon, I. podalirius* and rather worn *C. jasius* passed through the field, but didn't stay around.

The second site close to Kokkari village was a damp field next to the village by-pass, which was the site of a half-completed building project of some kind. A dry stream-bed marked one edge of the site, and there was an extensive stand of *Typha* (sp.).

Bordering on the road was a wide fringe of flowering plants, notably willowherb (probably *Epilobium hirsutum*), *Lotus sp.*, and a large, white-flowered bindweed (*Calystegia silvatica*?). I only discovered this site on 20 September, so could not observe it as thoroughly as the first site. However, it too, offered important nectar-sources, and was visited by Humming-bird Hawk-moths (*Macroglossum stellatarum* L.), *P. machaon, P. brassicae, L. boeticus, P. icarus, C. alceae, G. pumilio*, and *P. thrax*. At this site, both males and females of *thrax* were observed, nectaring from the willowherb flowers, along with a smaller number of *G. pumilio* and one *C. alceae* (female). One female *thrax* was observed settled with wings half-open, sunning itself on a dry grass-leaf. *G. pumilio* was also observed nectaring from the bindweed.

Our frequent walks up into the hills behind the village took us up a narrow lane to the west of the village, and across a stream bed, at this time of year a rather muddy trickle. Here, at an altitude of approximately 50 metres above sea level, it was possible to observe large numbers of butterflies and other insects coming in to sip up water and/or mineral nutrients in the heat of the day. This site, like the first, was observed frequently through our stay. Butterflies seen here included: *Lycaena phlaeas, Thecla quercus, Celastrina argiolus, Aricia agestis, Polyommatus thersites, C. jasius, Limenitis reducta, V. atalanta, Hipparchia syriaca, H. mersina, H. senthes, H. fatua, Maniola telmessia, Kirinia roxelana, Carcharodus sp.*, and *P. thrax*. Males of *H. syriaca* were repeatedly observed persistently "courting" females, but always unsuccessfully.

At higher altitudes, in the hills overlooking Kokkari and the coast, the various "grayling" species were very much in evidence, especially along tracks and in more open areas of low scrub and abandoned agricultural terraces. At one wet area below a small farm reservoir we saw *A. agestis*, *H. fatua*, *H. syriaca*, *H. mersina* ("mud-puddling") and many *M. telmessia*. Both *H. syriaca* and *H. fatua* were most often observed at rest on the trunks of pine or olive trees, or on rocks or stone walls, with occasional flurries of activity as they moved to new resting-sites. Tree-heather was in flower in one area we passed, and numerous *M. telmessia* were nectaring from it. The "strawberry tree" *Arbutus unedo* was common in the maqui, and we saw a few, rather worn, *C. jasius*. The very dark late brood of *L. phlaeas* was on the wing, and we also saw one male *L. sinapis*, white and entirely unmarked except for the black tips to the forewings.

On 17 September 1999, we decided to try a more demanding walk up beyond the village of Manolates towards the peak of Mount Karvouni. In the environs of the village we saw numerous *T. quercus*, as well as one *P. machaon*, several *P. brassicae*, *Gonepteryx cleopatra*, *H. syriaca*, *C. alceae* and *M. telmessia*. The track was not easy to follow, frequently crossed by new motor-trails, and often blocked by fallen trees. In an open area in the pine woodland, at between 600 and 700 metres, there were numerous "grayling" butterflies, mainly settled on pine trunks and branches. These included *H. syriaca*, *H. senthes*, and one *K. roxelana*, as well as several very worn and tattered individuals of *H. mersina*. The woodland was sufficiently open for dappled sunshine to penetrate, and *H. mersina* seemed to settle mainly in "sun-spots" on the pine trunks. Occasionally they would fly briefly, occasionally indulging in

"courtship" chasing, and then settle once more. *H. syriaca* behaved similarly, but with a swifter, "swooping" flight, and looking much darker. *H. syriaca* were frequently observed on rocks as well as tree trunks.

H. mersina was also seen on 21 September, in very similar open pine woodland, between the village of Vourliotes and Vrondianis monastery (300-450 metres). As at the previous site, they were worn and tattered, and noticeably smaller than the species with which they were flying. One male was observed unsuccessfully "courting" a female, and on one occasion a *syriaca* was observed "chasing" a *mersina*. The most common species here was *H. syriaca*, with *senthes*, in apparently fresh condition, being encountered at slightly lower altitudes. A few *Pararge aegeria* were also seen in open pine woodland in this area.

On 24 September, a final visit to the stream bed at the edge of the village revealed the same mix of species as usual, but with the addition of a male and female of *H. mersina*. These, unlike those seen at higher altitudes, were in quite fresh condition. They looked very different from the *H. senthes* also present at the site. The latter were much more clearly marked on the underside, with more strongly contrasting colour patterns. Tolman (*op. cit.*) gives the altitudinal range of *H. mersina* as 300 metres upwards on Samos and the flight period as mid-May to mid-July. These specimens appeared to be in fresh condition in the last week of September, and at approximately 50 metres. Olivier and de Prins (1989. *Phegea* **17**(4): 169-221), note the early emergence of *H. mersina* on Lesvos (earliest recorded 10 April) as a possible reproductive isolation mechanism *vis-a-vis H. pellucida* (not recorded from Samos). In their account, most females had already mated, and males were mostly worn by 17 to 23 June (in 1987). They supposed that the females aestivate and that oviposition takes place between late August and early September. In view of this, the presence of fresh males and females at a low altitude site in late September is surprising. So, also, is Tolman's observation of both very small and full-grown larvae in April. These observations together suggest the possibilities either that *H. mersina* is double-brooded, or, more likely, that the emergence of some individuals may be delayed until late summer or autumn. Clearly, there is room for more sustained study of the phenology of this species. It also seems that the lower limit of the altitudinal range is much lower than Tolman gives – quite possibly down to sea level.

In the course of the two-week stay from 13 to 24 September 1999, we were able to observe adults of some 32 species, roughly half the recorded butterfly fauna of the island. The full list of those species is as follows:

Hesperiidae
Carcharodus alceae (Esper)
Carcharodus sp. (orientalis/stauderi?)
Gegenes pumilio (Hoffmannsegg)
Pelopidas thrax (Hb.)

Papilionidae
Iphiclides podalirius (L.)
Papilio machaon (L.)

Pieridae
Leptidia sinapis agg.
Pieris brassicae (L.)
Pieris rapae (L.)
Pontia edusa (Fabr.)
Colias crocea (Fourc.)
Gonepteryx cleopatra (L.)

Lycaenidae
Lycaena phlaeas (L.)
Thecla (=Quercusia) quercus (L.)
Lampides boeticus (L.)
Leptotes pirithous (L.)
Celastrina argiolus (L.
Polyommatus (=Aricia) agestis (D.& S.)
Polyommatus (=Agrodiaetus) thersites (Cantener)
Polyommatus icarus (Rott.)

Nymphalidae
Vanessa atalanta (L.)
Vanessa cardui (L.)
Polygonia egea (Cramer)
Limenitis reducta (Stdgr.)
Charaxes jasius (L.)
Kirinia roxelana (Cramer)
Pararge aegeria (L.)
Maniola telmessia (Zeller)
Hipparchia syriaca (Stdgr.)
Hipparchia mersina (Stdgr.)
Hipparchia (=Neohipparchia) fatua (Freyer)
Hipparchia senthes (Fruhstorfer)

One disappointment was our inability to find the small eastern satyrid *Ypthima asterope*, and we were also unable to confirm the presence of the skipper butterfly *Carcharodus stauderi* (not so far recorded from the island), owing to its similarity to its close relative *C. orientalis*.– Ted Benton, 13 Priory Street, Colchester CO1 2PY. (E-mail: tbenton@essex.ac.uk)

Hazards of butterfly collecting. The "best" butterfly day of my life – Gambari, Nigeria, 1969

I wangled a one-day trip to the Gambari Forest in early August 1969. I had been on my second three-month trip to Nigeria; my father was working for UNICEF so after a long trip in the bush one could always revert to the bosom of one's family, get European food, and sleep in an air-conditioned room. I had already stretched the concept of term leave at the University of Copenhagen by 14 days to either side, so it was to be my last trip this time round.

Gambari has a long pedigree in African insect research since it is the experimental grounds of the Nigerian Cocoa Research Institute, easy of access from Ibadan, and with residential facilities. I had always wanted to visit, so it was a fine "last chance" that I was determined to grab. I went early to bed after having kindly been conveyed to Gambari from Ibadan, by the driving force in Nigerian entomology at the time, Prof. A. Youdeowei, editor of the Nigerian Entomological Society.

The next morning I was up at dawn and went out to take stock of the situation while munching some McVitie's Digestive Chocolate Biscuits; you can easily live on these for an entire day if necessary, though in hot climates a knife may be necessary to prize them apart from the melted chocolate (someone once called these biscuits a highlight of English achievement, or words to that effect).

The forest is not very large, probably less than 100 square kilometres, and it is transected by a grid of paths and forest roads, cutting the forest into numbered grids. Some are left in pristine condition, some are well-developed secondary growth, some are old dispersed cocoa with even older shade trees, others younger cocoa, and a few experimenting with the new-fangled idea of growing cocoa without shade trees. Here and there little rivulets crossed the roads, promising good mud-puddling later in the day.